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A compilation of available source material on programed learning, teaching machines, and experimental work in these areas is provided. Part One provides a bibliography in two sections: material published in the years 1956 through May 1961, and material published before 1956. Part Two lists the experimental work and teaching machine programs. Part Three lists available teaching machines and their manufacturers.

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PROGRAMED LEARNING AND TEACHING MACHINES

by

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INTRODUCTION

This brochure is an attempt to provide a complete, up-to-date compilation of all source material in the area of programed learning and teaching machines, as well as to include information regarding experimental work under way, and programs and machines available.

Part One consists of a bibliography; Part Two, a listing of experimental work and programs; and Part Three, teaching machines available and their manufacturers. The bibliography in Part One is divided into two sections. The first section lists material published in the years 1956 through May, 1961, while the second section gives earlier references--those published before 1956.

PART ONE

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PART TWO

EXPERIMENTAL WORK

and

TEACHING MACHINE PROGRAMS

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
Allen, Layman	Project ALL, Yale Law School, New Haven Conn.	Estates Law Gift & Estate Tax Law Logic for Lawyers Mathematical Logic	Law	Avail
Arky, Marshall	Roto-Vue, Rm. 1212, Holland Bldg. 211 N. 7th St. St. Louis 1, Mo.	General Science	Jr. Hi.	"
	Astra Corp., 31 Church St. New London, Conn.	Mathematics Vocabulary Spelling Science	Jr. Hi.	"
	Audio-Visual Pub., P.O. Box 54, Middlebury, Vt.			
Autor, Sanford M. & Hickey, Albert E.	Northeastern Univ. 360 Huntington Ave. Boston, Mass.	Probability & Statistics	College	"
Baen, Eliz. M.	Devereux Schools Devon, Pa.	Add. Fractions Sub. Fractions Story Problems Signs, Symbols, & Abbreviations	Up. Prim.	"
Banghart, Frank W.	Univ. of Va., Sch. of Ed. Charlottesville, Va.	Mathematics	Elem. 4, 5, 6	Experimental
Barlow, John A.	Earlham College Richmond, Indiana	Genetics Freshman Eng. Statistics Intro. to Music	College	

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
		Old Testament Russian Spanish Psychology Biology Chemistry		
	Battelle Memorial Inst. Columbus, Ohio			
Belfort, Anne D.	General Atronics Corp., One Bala Aven., Bala- Cynwyd, Pa.	French Program for Teachers Chemistry Review	Elem. Sr. Hi.	Experi- mental "
Birch, Jack	Univ. of Pittsburgh Pittsburgh 13, Pa.	Ed. of the Deaf		"
Bishop, Ann	Devereux Schools, Devon, Pa.	Number Sentences	Prim. & Elem.	Avail.
Blumenthal, Joseph C.	Harcourt, Brace & World, Inc., 750 3rd Ave., New York 17, N. Y.	Eng. Grammar	Sr. Hi.	"
Blyth, John, et. al.	Hamilton College Clinton, N. Y.	Logic Micrometer Use Permutations Psychology Calculus Analytic Geometry German French	College	
Brady, Joseph	Walter Reed Hospital Washington 12, D. C. (Working with Foringer)	Neural Anatomy		
Bryan, Glen & Don Schuster	Univ. of So. Calif. Los Angeles, Calif.	Electronics Trouble Shooting	Adult	
Calvin, Allen	Hollins College, Dept. of Psychology, Roanoke, Va.	Mathematics	Sr. Hi.	
Carrol, John	Harvard Univ., Cambridge Mass.	Chinese	College	Experi- mental
Cieri, V. P., A. K. Quinn, & N. G. Smith	U. S. Signal School, Fort Monmouth, N. J.	Basic Electronics	Adult	"

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
Colman, H., C. Smallwood, & A. Roe	West. Data Process. Center, Univ. of Calif. Los Angeles, Calif.	Fortan (computer) Programming	College	Experi-mental
Crawford, Robert	Univ. of Calif., Los Angeles 24, Calif.	Algebraic Struct.	Gr. 1	"
Crowder, Norman	Western Design & Elect. Santa Barbara Airport Santa Barbara, Calif.	*Arithmetic of Computers *Trigonometry *Algebra *Math for Technicians *Bridge *Intro. to Elect. *Law *Slide rule Logic of computers Music Remedial Eng. Chess Etiquette Poker First Aid Bookkeeping Statistics Navigation Management training	Adult, College, and Sr. Hi.	Avail " " " " " " " " " " " " " " " " " "
Cullman, R., & J. H. Day	Goddard College, Plainfield, Vt. Ohio State Univ. Athens, Ohio	Chemistry	College	
Deutsch, Wm. R., Charles Klein, & Hugh H. Anderson	Rheem-Califone Corp. 1020 N. La Brea Ave. Hollywood 28, Calif. Doubleday & Co., Inc. Garden City, N. Y. (Pub. Tutor-texts dev. by Western Design)	Statistics Mathematics English Vocab. Building	Adult Elem. " Adult & Sr. Hi.	Experi-mental " "
Duncan, Glenn Edgar	Educational Design of Ala. Inc., 1428 Univ. Ave. Tuscaloosa, Ala.	Elem. Drawing Hi-Speed Arithmetic		" "

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
	Electronics Teaching Lab., 5034 Wisconsin Ave., N.W., Washington 16, D. C.			
	Encyclopedia Brittanica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill.	Algebra Geometry Trigonometry Calculus Differential Equations French Spanish German (13 programs in Math & Languages)	Sr. Hi. & College	Avail " " " " " " " "
Evans, James (Now with TMI)	Univ. of Pittsburgh Dept. of Psychology Pittsburgh, Pa.	Number Bases		
Evans, Nelson (AV editor)	Allyn & Bacon, 150 Tremont St., Boston 11, Mass.			
Ferster, Charles B.	Educational Design of Ala., Inc., 1428 Univ. Ave., Tuscaloosa, Ala.	Psychology German	College	Experimental
Ferster, Marilyn B.	Educational Design of Ala., Inc., 1428 Univ. Ave. Tuscaloosa, Ala.	Arithmetic (Nurses) Copy Editing English Usage		Avail Experimental
Fry, Edward	Loyola Univ. of L. A. 7101 W. 80th St. Los Angeles 45, Calif.	Boolean Algebra (with Rigney) Educational Principles (with Meyers)	College	" "
Gagne, Robert	Princeton Univ.	Linear equations Binary numbers	College	
	General Atronics Corp. One Bala Avenue Bala-Cynwyd, Pa.	Organic chemistry Physics General Science Mathematics English grammar	 Sr. Hi. Elem.	
Gilbert, Thomas F.	Educational Design of Ala., Inc., 1428 Univ. Ave. Tuscaloosa, Ala.	Algebra Psychology	College	
Glaser, Robert	Univ. of Pittsburgh, Dept. of Psychology, Pittsburgh, Pa.	Statistics Mathematical Bases for Management Decision Making	College College	" "

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
		Bookkeeping	Sr. Hi.	Experi-mental
		Symbolic Logic	"	
		General Science	Jr. Hi.	"
		Telling Time	Elem.	"
Hedberg, Donald	Dyna-Slide Co., Chicago 5, Ill.	Review with Reinforcement	Correspond-ence Sch.	Avail
Hively, Wells	Harvard Univ. 32 Little Hall Cambridge 38, Mass.	Visual Discrim.	Pre-Prim.	Experi-mental
		Concept formation	"	
		Pre-reading	"	"
		Reading	"	"
Holland, Audrey		Ear Training Aspects of Speech Correction		"
Holland, James G. & B. F. Skinner	Harvard Univ.Psych. Labs., Memorial Hall Cambridge 38, Mass.	Psychology	College	Avail
Holt, H. Oliver	Bell Telephone Lab. Inc., Murray Hill, N. J.	Basic Electricity	Adult	Experi-mental
Homme, Lloyd E.	Teaching Machines, Inc., Albuquerque, New Mexico 235 San Pedro N. E.	Music Fundamentals		Avail
		Statistical inference		"
		Descrip. Statistics		"
		Spelling	Elem.	"
	Sold Through: Grolier, Inc., 575 Lexington New York 22, N. Y.	Algebra		"
		Electricity		"
		Mult. & Div. Facts		"
		Hebrew		"
		Russian		"
		English grammar		"
		French		"
		Spanish		"
		German		"
Hoose, Idabelle K.	Kent State Univ. Kent, Ohio	Spelling		Experi-mental
		Latin		
Hughes, John	IBM Research Center, Box 218, Lamb Est., Yorktown Heights, N. Y.	Computer systems	Adult	
	Instrument Research Co. Garden Grove, Calif.			
	Itek Corp., Information Tech. Lab., 10 Maguire Rd. Lexington, Mass.		"	

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
Jackson, Anne	Devereux Schools Devon, Pa.	Counting	Prim.	Avail.
		Most and Least	"	
		Telling Time	"	
	Keesler AFB	Electronics		
Keislar, Evan	Univ. of Calif. Los Angeles 24, Calif.	Elementary Science	Elem.	Experimen.
		Arithmetic	5th grade	Avail.
Klaus, David J.	American Inst. for Research, 410 Amberson Ave. Pittsburgh, Pa.	Physics	Sr. Hi.	
		Creative Problem Solving	"	
		Art Appreciation	"	
		Electronics	"	
		Atomic Physics	" & College	
		Life Ins.	Adult	
Komoski, Kenneth P. & Lewis Eigen	Collegiate School, Center for Programmed Instruct. 365 W. End Ave., New York 24, New York.	French spelling	6, 7, 8	
		Begin. French	Elem.	
		German	"	
		Number concepts	Prim.	
		Mathematics	Jr. Hi, Sr. Hi.	
		Sets, Relations & Functions		
		Math for Science	Sr. Hi.	
		Spelling	"	
		Critical Reading Development. Read.	Elem.	
		Chemistry	Sr. Hi.	
		Physics	"	
		General Science	Elem.	
Lumsdaine, A. A. (now with U.C.L.A.)	American Inst. for Research, 410 Amberson Ave. Pittsburgh, Pa.	TV lectures SAGE operators	Adult	
Lysaught, J. P.	Recordak Corp., 343 State St., Rochester 4, N.Y. (subsidiary of Eastman Kodak)	Logarithms	Adult	Experimental
		Economics		"
		Basic Photography		"
		Indust. relations		"
		Use of Slide rule		"
		Human motivation		"
	Magnetic Recording Indust. 11 E. 16th St., New York, New York			
Mahan, Philip C.	Educational Design of Ala., Inc., 1428 Univ. Ave. Tuscaloosa, Ala.	Business Law		"
		Contract Law		"

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
Markle, Susan Meyer	Center for Programmed Instruction, 365 W. End Ave., New York 24, N. Y.			
	Univ. of Maryland, Dept. of Speech, College Park, Md.	Training of Aphasics		
Matthews, Jack & Everett Campbell	Univ. of Pittsburgh Pittsburgh 13, Pa.	Language Arts for Cerebral Palsied Children		Experi-mental
Mechner, Frances	Basic Systems, Inc., 42 E. 52nd St., N. Y., N. Y.	Engineering Algebra Geometry Trigonometry Physics Chemistry Biology Medicine Computers	Elem. through College	
	National Teaching Machines, Inc., Box 4016, El Paso, Texas	Algebra	College	
Nelson, Charles W.	Management Research Assoc. 14 Hill Drive, Dune Acres, Chesterton, Ind.	Arithmetic	8th grade	
	Office of Training Service National Security Agency			
Ouhl, Ellen	General Atronics Corp., One Bala Ave., Bala-Cynwyd, Pa.	Hospital Aids Training Retail Sales Training	Adult "	Experi-mental "
Parker, Don H., & Frederic Walker	Science Research Associates Inc., 259 E. Erie St., Chicago 11, Ill.	Spelling Reading	5, 6, 7, 8 Prim., Elem., Sr. Hi.	Avail "
Pennington, Dempsey F.	Educational Design of Ala. Inc., 1428 Univ. Ave. Tuscaloosa, Ala.	Dept. Store Sales Clerking Reading Arithmetic Morse Code Spanish		" Experi-mental " "
	Polariod, 741 Main St. Cambridge 39, Mass.	Mathematics Science	Adult	

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
Porter, Douglas	Harvard Univ., Graduate Sch. of Ed., Cambridge 38, Mass.	Spelling	2nd & 6th grades	
Pressey, Sidney	Ohio State Univ.	Psychology	College	
Reynolds, R. L.	Educational Design of Ala. Inc. 1428 Univ. Ave. Tuscaloosa, Ala	Comm. Bank Teller Slide Rule Bookkeeping Driver Training		Avail. " Experi-mental
Robins, Lewis	William Barton Marsh Co. 18 E. 48th St., New York 17, New York			
Rocklyn, Eugene H. & Richard Moren	Human Resources Research Office, George Washington Univ., Box 3596, Washington 7, D. C.	Russian Limited Language	Adult	" "
Roe, Arnold	Automated Learn. Research Project, Dept. of Engin. Univ. of Calif. Los Angeles, Calif.	Intro. to Proba-bility	College	Avail. (Samples)
Rowland, Devra	Fairleigh-Dickinson College Teaneck, N. Y.	English grammar	Sr. Hi.	
Saltzman, Irving	Indiana Univ. Bloomington, Ind.	Russian	College	Experi-mental
Schramm, Wilbur	Inst. for Communication Research, Stanford Univ. Stanford, Calif.			
Schure, Alexander	N. Y. Inst. of Tech. 135 W. 70th St. New York 23, N. Y.	Electronics " Mathematics Physics Chemistry Economics	Adult College " " " "	Avail. Experi-mental " " " "
Schutz, Richard	Univ. of Arizona	Arithmetic	Elem.	
	Science Research Assoc. 259 E. Erie St. Chicago 11, Ill.	Reading Spelling Mathematics Science Critical Reading	Elem. & Sr. Hi. Elem. & Jr. Hi. Sr. Hi. Elem.	Avail. " Experi-mental "

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
Silberman, Harry	System Develop. Corp. 2500 Colo. Ave., Santa Monica, Calif.			
Silverman, Robert	New York Univ., Univ. Heights, New York 53, N.Y.	Binary Arithmetic		
Silvern, Leonard C.	Videosonic Systems-Bldg. 116/11 Hughes Aircraft Co. Culver City, Calif.	Fire Behavior	Adult	Experi-mental
Slack, Charles W.	Behavior Research & Develop. Center, Div. of Ed. Design of Ala., Inc., 1428 Univ. Ave., Tuscaloosa, Ala.	Trumpet Orientation (Prison Inmates) Time Telling Self-Management of Young Children Algebra (out of print) Home Management Aids		" " Avail. " " "
Smith, Donald E. P.	Univ. of Michigan, Bureau of Psych. Services, 524 Univ. Elem. Sch., Ann Arbor, Michigan	Grammer	Sr. Hi.	
Smith, Edgar	Devereux Schools Devon, Pa.	Our Fifty States Arithmetic Special Education (mentally retarded)	Elem. "	" "
Spivack, George	Devereux Foundation Devon, Pa.	Spelling	6th grade	
Stancil, B. J.	Ed. Design of Alabama Inc., 1428 Univ. Ave. Tuscaloosa, Ala.	How to Study Penmanship		Experi-mental
Stolurow, Lawrence	Univ. of Ill, Dept. of Psych., Training Research Lab., 45 Lincoln Hall, Urbana, Ill.	Descriptive Statistics Arithmetic Fundamentals Logic Mathematics Spelling Sight Vocab. Special Education		
	U. S. Naval Train. Device Center, Port Washington, New York	Electronics Trouble-shooting Binary Arithmetic	Adult	
	U. S. Army Southeastern Signal Corps Sch., Fort Gordon, Ga.	Mathematics Comm. Procedures	"	

Principal Investigator or Author	Institution or Corporation	Subject	School Level	Materials
Van Atta, Loche	Oberlin College Oberlin, Ohio	Psychology Genetics Music Theory Logic	College	
Van Valkenburgh, Nooger, & Neville, Inc.	John F. Rider, Pub., Inc., 116 W. 14th St. New York 11, N. Y.	(Semi-Programed texts) Electricity Electronics Synchros and Servomechanisms	Sr. Hi. " " "	Avail. " " "
	Varian Assoc. Palo Alto, Calif.	Switches	Adult	"
Wendt, Paul	So. Ill. Univ. College of Education Carbondale, Ill.	Use of Library	College	Experi-mental
	Williams Research Corp. Walled Lake, Mich.			
Young, Jay A.	Kings College Wilkes-Barre, Pa.	Chemistry	College	

PART THREE

TEACHING MACHINES

Manufacturer or Investigator	Name of Device
A.H.B. Products, 6247 Park, Indianapolis, Ind. (Developed at Institute for Psychiatric Research, Ind. Univ. Medical Center, Indianapolis 7)	Cardboard Mask (and others)
Applied Communications Systems, Div. of Litton Systems, Inc., 8535 Warner Dr., Culver City, Calif.	ACS Mark I (automated flash card device)
Astra Corp., 31 Church St., New London, Conn.	Autoscore
Automated Learning Research Project, Dept. of Engineering, Univ. of Calif., Los Angeles (Arnold Roe and M. Sink)	Random Access Card Teaching Machine Cardboard Masking Sleeve
Behavioral Science Lab., Aeronautical Systems Division, Wright-Patterson AFB, Ohio	Subject Matter Trainer Card Sort Device - developed by L. J. Briggs, now with American Inst. for Research Polymath - developed by E. Z. Rothkopf, now with Bell Telephone Labs.
Calif. Bell and Howell, 7100 McCormick Rd. Chicago 45, Ill.	
Concord Control, Soldier's Field Rd., Boston Mass.	
Consolidated Lithographing Corp., Carle Place P. O., Long Island, N. Y. (machine developed at N. Y. Institute of Technology)	Color AutoScore Edumator: Colortexts
Crafting Manufacturing Co., 1615 Collamar Ave., Cleveland 10, Ohio	The Chemo Card
David Scientific Instruments, 12137 Cantura St., Studio City, Calif.	Projector Programmer
DuKane Corp., St. Charles, Ill.	
Dyna-Slide Co., 600 S. Michigan, Chicago 5, Ill.	Slide-a-Mask Vertimask

Manufacturer or Investigator	Name of Device
Educational Development Associates, 2302 J Street, Eureka, California	
Educational Design of Alabama, Inc. 1428 Univ. Ave., Tuscaloosa, Ala.	Ferster Tutor Single Sheet Tutor Memorease Children's Clock Ferster Habit Pacer Progress Plotter Automatic Interview Machine
Foringer & Co., Inc., P.O. Box 5882, Bethesda 14, Md.	Foringer Teaching Machine
General Atronics, One Bala Ave., Bala-Cynwyd, Pa.	Atronic Tutor TAG (Classroom) TAG (Portable)
Hamilton Research Associates, Box 38, New Hartford, N. Y.	Auditutor Visitutor
Hollinger Corporation	
Hughes Aircraft Co., Videosonic Systems, International Airport Sta., Box 90904, Los Angeles 45, Calif.	Videosonic Teaching Machine (Research Model)
Instrument Research Co., Garden Grove, Calif.	Multiple-Choice Card Teach. Machine
Koncept-O-Graph Co., Box 000, Rochester 3, N. Y.	Koncept-O-Graph Machines
Management Research Associates, 14 Hill Drive, Dune Acres, Chesterton, Ind.	Multiple-Purpose Self Trainer
National Blank Book Co. Holyoke, Mass.	Loose leaf and spiral binders for programmed text materials
New York Institute of Technology 135 W. 70th St., New York 23, N. Y.	ATD (computer teaching) Electronic Classroom Color AutoScore Edumator Colortexts and Simulators
RCA, Industrial Electronics Products, Camden 2, N. J.	
Recordak Corp., 343 State St., Rochester 4, N. Y.	
Rheem-Califone Corp., Electronics Division, 1020 N. La Brea Ave., Hollywood 38, Calif.	Didak "501" Psycho-Motor Trainers

Manufacturer or Investigator	Name of Device
Roto-Vue, Rm. 1212, Holland Bldg., 211 N. 7th St. St. Louis, Missouri	Roto-Vue
Skil-Guide, Inc., 527 Lexington Ave., New York 17, N. Y.	
Smith Harrison, Inc., Box 717, Devon, Pa.	Devereux Teaching Aids (4 models)
Systems Development Corp., 2500 Colorado Ave. Santa Monica, Calif.	
Teaching Machines, Inc., 235 San Pedro Drive, N. E. Albuquerque, New Mexico Sold through: Grolier, Inc., 575 Lexington 22, N. Y.	Min/Max Wyckoff Film Tutor Wyckoff-Cornell Language Tutor Programmed Textbooks
United States Navy, Training Device Center Port Washington, N. Y.	Tester Rater
Van Valkenburgh, Nooger and Neville, Inc. 15 Maiden Lane, New York 38, N. Y.	Trouble Shooting Trainer-Tester (4 models) Self-Scoring Trainer-Tester Answer Sheets
Western Design and Electronics Santa Barbara Airport, Santa Barbara, Calif.	Auto Tutor Tutortexts (published by Doubleday)

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